

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,796	03/06/2002	Enrique Garcia	IBM 0115	8791
32047	7590	09/14/2004	EXAMINER	
GROSSMAN, TUCKER, PERREAULT & PFLEGER, PLLC 55 SOUTH COMMERICAL STREET MANCHESTER, NH 03101			KNOLL, CLIFFORD H	
			ART UNIT	PAPER NUMBER
			2112	

DATE MAILED: 09/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/091,796		GARCIA ET AL.	
	Examiner		Art Unit	
	Clifford H Knoll		2112	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/21/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2112

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 4, "comoprising" should be "comprising"

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Jeddeloh (US 6473817).

Regarding claims 1 and 5, Jeddeloh discloses agents selectively coupled to a resource; and an arbitration controller adapted to monitor said resource used by each agent and adapted to calculate an optimal usage of said resource for each agent (e.g., col. 3, line 66 – col. 4, line 4) and generate grant control signals to each agent to couple said agents to said resource based on said calculated optimal usage for each said agent (e.g., col. 5, lines 60-67).

Art Unit: 2112

Regarding claim 2, Jeddeloh also discloses fixing an arbitration for a plurality of agents sharing a resource (e.g., col. 4, lines 43-47); determining the demand for each agent by skewing arbitration priority to the particular agent (e.g., col. 5, lines 13-16); correlating the demands for each agent for a predetermined duration (e.g., col. 5, lines 5-12); and assigning resource arbitration priority to each agent based on the historical ratio of the demand for each agent over the sum of the demands of all agents (e.g., col. 5, lines 31-38).

Regarding claim 3, Jeddeloh also discloses the step of applying statistical techniques to the correlated data to determine a mean demand for each agent (e.g., col. 5, lines 7-8).

Regarding claim 4, Jeddeloh also discloses repeating the process of determining the demand, correlating the demands and assigning resource arbitration (e.g., col. 4, lines 18-21).

Regarding claim 6, Jeddeloh also discloses the PCI bus and agents (e.g., col. 7, lines 25-27).

Regarding claim 7, Jeddeloh also discloses a bus monitor consisting of logic which monitors some or all of bus transactions for each said bus agent (e.g., col. 5, lines 31-38); and programmable bus arbitration logic comprising priority assignment registers for each bus agent and logic to generate said grant control signals based on the data stored in said priority assignment registers (e.g., col. 4, lines 43-47).

Regarding claim 8, Jeddeloh also discloses calculating the bus effective bandwidth for each transaction of each said bus agent, and stores the running average for each bus agent in bandwidth registers (e.g., col. 5, lines 8-11).

Regarding claim 9, Jeddeloh also discloses decoding said priority assignment registers for each bus agent and assigns each agent a number of grant control signals based on the value in its respective priority assignment register (e.g., col. 6, lines 54-60).

Regarding claim 10, Jeddeloh also discloses fixing an arbitration of each agent sharing a resource (e.g., col. 4, lines 53-56); skewing priority to an agent for a fixed interval (e.g., col. 4, lines 61-65); monitoring resource usage of said agent having priority (e.g., col. 5, lines 5-8); creating a table of resource requirements for each agent during said fixed interval (e.g., col. 5, lines 8-11); and assigning resource priority to each agent based on said table of resource requirements (e.g., col. 5, lines 17-22).

Regarding claim 11, Jeddeloh also discloses correlating resource requirements for each agent over a specified period of time and determining a mean resource requirement for each agent (e.g., col. 5, lines 8-11) and statistically removing aberrations from the data (e.g., col. 5, lines 8-10, the process of averaging removes aberrations, an average is a statistic).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miller (US 5784569) discloses priority modification based on

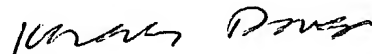
statistics provided by latency measurements. Sheafor (US 6119188) and Jacobs (US 6385678) disclose additional statistic-based modification.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clifford H Knoll whose telephone number is 703-305-8656. The examiner can normally be reached on M-F 0630-1500.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark H Rinehart can be reached on 703-305-4815. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

chk



Khanh Dang
Primary Examiner